

CLAIMS

1. Process for the treatment of bauxite (10) by alkaline digestion, typically using the Bayer process in order to obtain alumina hydrate, characterised in that ground bauxite (11, 15) is added directly into an alkaline solution (21a) that is drawn off and that will be reinserted into the Bayer aluminate liquor circuit (20), the said alkaline solution (21a) being heated to a temperature such that after the said ground bauxite (11, 15) and the said alkaline solution have been brought into contact, the temperature of the slurry resulting from this mix is greater than a temperature close to the boiling temperature at atmospheric pressure, in other words typically greater than 95°C.

2. Process for the treatment of bauxite (10) according to claim 1, in which the said alkaline solution is heated to a temperature such that after the said ground bauxite (11, 15) and the said alkaline solution have been brought into contact, the temperature of the slurry resulting from this mix is greater than or equal to the boiling temperature at atmospheric pressure.

3. Process for the treatment of bauxite (10) according to either claim 1 or 2, in which the said bauxite is ground in the presence of an aliquot representing less than 15%, and preferably less than 10% of the green liquor.

4. Process for the treatment of bauxite (10) according to any of claims 1 to 3, in which the said ground bauxite (11, 15) is previously heated at a

temperature close to the temperature to which the said alkaline solution (21a) is heated.

5. Process for the treatment of bauxite (10) according to any of claims 1 to 4, in which the said
5 bauxite is wet ground at a temperature greater than 95%.

6. Process for the treatment of bauxite (10) according to any of claims 1 to 5, in which the said alkaline solution (21a) is an aliquot of the green liquor not exceeding 25% and even better not exceeding 20% of
10 the total flow.

7. Process for the treatment of bauxite (10) according to any of claims 1 to 5, in which the said alkaline solution (21a) is an aliquot of a washer overflow, said washer being devoted to wash insoluble
15 residues, typically the first washer overflow.

8. Process for the treatment of bauxite (10) according to any of claims 1 to 7, in which the desilicated suspension (30) is submitted to a liquid / solid separation, the liquid being added back into the
20 desilication autoclave (A) and the solid is transferred and is then injected into the digester (B).